# Section of the History of Medicine.

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## Francis Home (1719-1813), First Professor of Materia Medica in Edinburgh.

By Fleet-Surgeon W. .E HOME.

FRANCIS HOME was a member of a legal family, and was educated at Duns, the capital of Berwickshire, with which his family is connected. He was apprenticed to an Edinburgh practitioner. In **1742**, though still unlicensed, he "joined up" for the War of the Austrian Succession as surgeon to the 6th Inniskilling Dragoons in Flanders, serving at Dettingen, 1743, and Fontenoy, 1745, not returning home till 1748. His work in Flanders was commended by Sir John Pringle, Physician-General to the Forces and at the same time Professor of Moral Philosophy in Edinburgh (1734-1745). While in Flanders in the intervals of his campaigns Home studied at Leyden, then the leading medical school.

He graduated (M.D.) at Edinburgh in 1750, was licensed by the College of Physicians there in 1751, and in 1752 became a Fellow of the College.

Home's first publication was his thesis on Remittent Fever (**1750**). It records his experiences in Flanders. The first "febrile constitution" (epidemic fever), that of 1743, arose in September, he tells us, and was an intermittent, due to damp and hot days and cold nights, the cases very bilious and apt to turn to jaundice. Nature's cure was by vomiting, and purging or epistaxis, and he had found it well to follow the same lines. The second "febrile constitution" was that of July, 1748, in many ways similar, but several cases seem to have had a malignant onset like that of tropical malaria, ending suddenly in death. He never saw any with a temperature above 104° F., seldom so much. Boerhaave used the thermometer with fever cases in 1735-40; hence Home's inspiration. The first cases followed a very damp day, and the number of fresh cases varied with the humidity, of which he kept an exact register. The attacks were at first remittents, but in September and October they changed to intermittents, and by December they had greatly decreased. He opines that damp is the cause of all these fevers, the remittent form occurring only when temperature is higher. Damp relaxes the fibres, lessens perspiration, and so makes it difficult for the body to throw off the putridity which is in the blood. In a later work he prints the Regimental Orders aimed at the prevention of this disease. These he drew up at the desire of the Commanding Officer (*Med. Facts and Expmts.*, 1759, p. 57). One item has interest, "The Dragoons shall drink no water without it be first boiled," to which he adds, "and a little brandy or gin mixt with it," which seems less severely scientific.

In **1751** Home published, in the form of a letter to Lord Marchmont, *An Essay on the contents and virtues of Dunse Spaw*, a detailed discussion of the physical, chemical, and therapeutical properties of the water of a spring at Duns, which he decides to be ferruginous and tonic; also anthelmintic, as an earthworm died sooner in that than in ordinary spring water!

He was much concerned at this time with chemistry, and in **1756** published two important works on the subject. One was *Experiments on Bleaching*, prepared "at the desire of the Honourable Board of Trustees for the Improvement of fisheries and

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manufactures." It was read in different lectures, and the experiments described were performed, so far as possible, before the bleachers of the country. He examines the process of bleaching, and recommends that, in place of souring the linen with sour milk, uncertain in both time and dosage, bleachers should use dilute sulphuric acid, whereby the time of bleaching would be shortened by a half. This was a valuable improvement, and the Board paid him £100 for his experiments. He was thought to have made the industry profitable, especially in Ireland, and is generally credited with having thus improved the process. The book was translated into German, and published at Leipzig in 1777. The other was *The Principles of Agriculture*, to which the Edinburgh Society for the Improvement of Arts and Manufactures granted a gold medal as the best dissertation on the principles of agriculture presented to them. He himself declared it a pioneer attempt to "introduce a new science (i.e. chemistry) to the assistance of this art (i.e., agriculture)." It had three London editions (1757, 1759, 1776), a Dublin edition (1759), a French edition in 1761, and two editions in Germany (1763, 1779). The German translator, J. C. Wöllner, points out that Home here shows for the first time that there is nutrient matter for plants in the air. Home shows a good grasp of scientific method, but is much hampered for want of laboratory equipment. He seems to have invented a quantitative soap test of the hardness of water for himself.

In **1759** he issued his *Medical Facts and Experiments*. He reports here an observation which was not confirmed and explained for some 150 years. "I never saw the bark succeed," he says, "if the blood was 'sizy.'" This being interpreted, means that the blood of malarial cases, not showing a polymorphocytosis, does not throw up a sizy or buffy coat, as does the blood of an ordinary suppurative infection. In other words, quinine has no specific action on fevers with suppuration, but only on malarial cases, which, having a leucopænia, do not form the sizy coat on the clot.

In the winter of **1756** measles was very prevalent in Edinburgh, and some 10 per cent. of the cases died. "Second attacks were not uncommon." Our author reports one fatal case, and two others with months of convalescence. As the disease was very destructive he considered whether something to mitigate it might not be tried on the lines of the inoculation which had so reduced the dangers of small-pox. He thought it best to take the poison from the rash just after its climax, and from the most feverish patients. He found great difficulty in getting subjects for inoculation; some he certainly had to pay. The blood was taken from a superficial incision, made where the rash was thickest, and was taken up on cotton. Next day or later an incision was made on each arm of the subject to be protected, and after a quarter of an hour, when the bleeding had ceased, "the cotton was put in," and remained three days in the wound. Twelve children were inoculated thus; three failed. In the others with "material" aged 1-17 days, the rash appeared between the seventh and tenth days, the coryza a couple of days sooner. The inoculated disease was very mild. One case took measles again, rather more severely, five weeks later; this is considered a relapse as the epidemic had now ceased. He also attempted inoculations with cotton swabs from nose to nose, but without success. Measles was so much less dangerous and disfiguring than small-pox, that inoculation against it was not found worth while.

In **1758** was published the first edition of his *Principia Medicinæ*. In this book he discusses angina under two heads, *angina inflammatoria*, covering quinsy, venereal sore throat, and perhaps mumps, and *angina maligna*, a variety first, he says, described by Aretæus, lately prevalent in Spain and Italy, and accurately described by Fothergill; chiefly a disease of children, very contagious, attacking perhaps a whole family; a general disease, but specially affecting the fauces, causing great weakness; very treacherous, and having a very unpleasant odour. It was, in fact, diphtheria.

In **1765** he published his short work on "Croup," describing himself on the title page as "His Majesty's Physician." Croup is stated to be a disease of children, suffocative, with a sharp stridulous voice and trouble in swallowing. Twelve cases are reported. Three cases recovered in a week; the other nine all died, and in each there was found post-mortem a membrane in the throat and/or suppuration in the trachea and bronchi. These were clearly diphtheria. Yet they seemed to this very experienced physician to differ, clinically, from those he had hitherto seen, and they were so accepted by the profession. It seems to me that this differentiation of croup as a separate entity is due to the fact that Home carefully reported post-mortem appearances, which are not mentioned by either Huxham or Fothergill. "Home's publication aroused the attention of the whole medical world. Everywhere the new disease was actively studied, and Home's statements were repeatedly confirmed."[1] We find his book translated into French as late as 1810, and his doctrine accepted by the Paris Academy of Medicine. Not until Bretonneau, about 1820, saw both angina maligna and croup in the same epidemic did these diseases come to be regarded as the same.

In **1758** Home was chosen the first Professor of Materia Medica in the University, with the usual term of service in the University Clinical Ward in the Infirmary. In **1770** was published his *Methodus Materiæ Medicæ*, a classified syllabus of drugs for the use of his students. There is in the Society's Library a MS. volume of notes on his lectures delivered in 1775-6. It is likely that this was produced to the order of the famous Dr. J. C. Lettsom, who greatly admired Home's system. In **1775** he followed Cullen as President of the College of Physicians in Edinburgh, of which Lind had for some time been Treasurer, and when Lind's book on Scurvy came out (1753) Home followed his teaching in his Principia.

In the Society's Library are two small volumes, MS. Reports, by a student I think, of the cases treated in the clinical ward by Home during his tour of duty in 1776-7, sixty-five cases being set out at length. There is as yet little physical examination apart from the pulse and its rate, which occupies the place of the thermometer as a register of pyrexia. Pleurisy is known by a pain in the side, but is not distinguished from pleurodynia, and effusion is suggested without recorded reason. A case of lumbar girdle pain, difficulty in micturition and defæcation, tremor, loss of power of walking, and history of venereal disease, was probably locomotor ataxia. After four unprofitable weeks he was treated with the moxa for three minutes, and actual cautery by burning cotton for two inches on each side of the spine. Thereafter he was discharged "relieved." Treatment was strenuous, every new pain got a blister, and some patients were discharged for refusing treatment, some "absconded." Of the sixty-five cases only three died in hospital. The professor took credit to himself for treating itch with the sulphur bath. "Half a pound of the Hepar Sulphuris, dissolved in the Warm Bath will serve, repeatedly heated" for the use of a series of patients.

In **1780** he published his last book, *Clinical Experiments, Histories and Dissections*,[2] in which he mentions that he had fermented the sugar of diabetic urine with yeast. This was his own clinical discovery.

In **1798**, aged 79, he resigned his professorship, and was succeeded by his son James. He died in **1813**, aged 94, and was buried at Earlston, Berwickshire.

1 F. Löffler in Nuttall and Graham Smith, "Bacteriology of Diphtheria," London, 1913.

2 Second edition, 1782; third edition, 1783.